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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/914,868	08/19/97	BJORNARD	E 07041/106001

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E1M1/0319

EXAMINER

CHANG, A

ART UNIT

PAPER NUMBER

2507

DATE MAILED: 03/19/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

08/914868

Applicant(s)

Bjornard et al

Examiner

A. Chang

Group Art Unit

2507

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1 To 32 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☒ Claim(s) 9-10, 19-22, 31-32 is/are allowed.
- ☒ Claim(s) 1-8, 11-18, 23-30 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_.

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

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## **DETAILED ACTION**

### ***Remark***

1. This Office Action is in response to an application for reissue of patent number 5,579,162. Claims 1-32 are pending in this application.

### ***Claim Objections***

2. Claims 24-30 are objected to under 37 CAR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 24-30 recite that the sputtered material is reactively sputtered which fail to further limit the feature of "reactively sputtered material" recited in their base claims (claim 1 and 8).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 8, 11-15, 16, 18, 23-26, 28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Biornard (PN. 5,091,244).

Biornard teaches an electrically conductive, light attenuating antireflection coating comprising a structure (15) having four films (20, 22, 24 and 26) deposited on a plastic substrate (28) wherein the films are substantially transparent to visible light with at least one film is of tin oxide ( with index of refraction

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= 1.9) and at least one other film is of silicon dioxide, (please see Figure 3, columns 7-8). With regard to claims 8 and 18, Biornard teaches that the layer films may be deposited by different sputtering apparatus including DC reactive sputtering process.

The feature concerning the antireflection layer films being a reactively sputtered material, which is the product-by-process limitation of the claims 1, 4-6, 11, 14-16, and 23-26, 28 and 30, is giving no patentable weight. It is known that the method of forming the device is not germane to the issue of patentability of the device itself. The sputtering process including DC reactive sputtering process recited in the claims and other process such as chemical vacuum deposition (CVD) are all conventional thin film deposition processes therefore this process limitation does not patentably distinguish the film material of applicant's invention over the film material in the prior art. See MPEP sections 2113, 2175.05(p).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 15 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Biornard in view of the patent issued to Austin (PN. 5,362,552).

The antireflection coating taught by Biornard described for claim 1 above has met all the limitations of the claims. Biornard teaches that the film layer material is preferred to have a refractive index between 1.35 and 2.65 at wavelength range of 510 nm, (please see column 7 lines 65-69 for layer 26), but this reference fails to disclose explicitly that the layer may be tin-doped indium oxide (ITO). However, both ITO

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and tin oxide having refractive index between 1.9 to 2.1 are well known layer materials and are considered to be in an equivalent class of materials for the antireflection coating, as disclosed by Austin (please see column 4), to replace one by the other would have been obvious to one skilled in the art. With regard to claim 27, the feature concerning the manner of making the ITO material is not giving patentable weight for the reasons stated for claim 1 above.

7. Claims 7, 17 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Biornard in view of the patent issued to Dickey et al (PN. 5,372,874).

The antireflection coating disclosed by Biornard described for claim 1 above has met all the limitations of the claims. Biornard teaches that the four-layered antireflection coating has a structure of having the outermost layer formed with a material of refractive index less than 1.9 and an optical thickness of a quarter wavelength but fails to disclose the explicitly structure claimed in claim 7 and 17. Dickey et al in the same field of endeavor teaches an antireflection coating on a plastic substrate (14) wherein the layer structure assumes the well-known Rock structure that reads on the structure limitations of the claims, (please see Figure 6 and column 6). It would have been obvious to one skilled in the art to apply the teachings of Dickey et al to modify the structure of the coating of Biornard for the benefit of obtaining desired transmission/reflection characteristics since the structure is well known and it is known in the art to vary the optical thickness of the layers to vary the characteristics of the coating.

The product-by-process limitations concerning the manner of the layer material being made recited in claims 27 and 29 is not giving any patentable weight for the reasons stated for claim 1 above.

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***Allowable Subject Matter***


8. Claims 9-10, 19-22 and 31-32 appear to be allowed over the prior art references of the record.
9. The following is a statement of reasons for the indication of allowable subject matter: Of the prior art references considered none has disclosed an anti-reflection coating for a substrate comprising a first layer of silicon dioxide, a second layer of tin oxide, a <sup>third</sup> thin layer of silicon dioxide and a fourth layer of tin oxide arranged in consecutive numerical order with the first layer being farthest from the substrate where each layer having a specific physical thickness.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chang whose telephone number is (703) 305-6208.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A. Chang

March 11, 1998

  
PAUL MODZEZYŃSKI  
SUPERVISORY PATENT EXAMINER  
GROUP 2500